Ports and Waterways Safety Assessment

Workshop Report

Morgan City, Louisiana

26 – 27 March 2025

Providing Navigation Safety Information

for America's Waterways Users

Released By:

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Executive Summary

Coast Guard Marine Safety Unit Morgan City sponsored a Ports and Waterways Safety Assessment (PAWSA) workshop in Morgan City, Louisiana, from March 26, 2025, to March 27, 2025. Twenty-six participants representing a range of waterway users, stakeholders, federal, state, local regulatory and public safety authorities met and collaboratively assessed navigational safety on the 300 nautical miles of waterways intersecting and surrounding Morgan City. This report provides a visual depiction of the study area and contains the full list of workshop participants and their associated organizations. The first day of the workshop included discussions about port and waterway attributes and vessel traffic in relation to the sixteen Waterway Risk Factors (WRFs) in the PAWSA Waterway Risk Model, which is described in more detail in this report. The Risk Characterization for each WRF was established based on participants' survey responses. Risk Characterization assesses the potential consequence, risk trend, risk tolerance, and effectiveness of existing mitigation strategies for a specific WRF. The metrics from the Risk Characterization quantitatively prioritize WRFs to inform discussions during the next phase of the workshop. During the second day, participants reviewed and validated the aggregated survey ranking of the WRFs and conducted follow-on discussions to identify and develop risk mitigation strategies. The five numerically highest WRFs ranked by participants are documented in the table below with their associated Waterway Risk Condition. This report contains a full list of prioritized WRFs with additional details.

Waterway Risk Condition	WRF
Navigation	Winds
Navigation	Bottom Type
Waterway	Dimensions
Waterway	Obstructions
Vessel Quality & Operation	Commercial Fishing Vessels

The recommended mitigation strategies and participant observations documented in this report will meaningfully facilitate continued collaboration between the Coast Guard and waterway stakeholders to improve safe and efficient navigation within the Marine Transportation System (MTS). The Director of Marine Transportation Systems (CG-5PW), the Coast Guard's Navigation Center (CG NAVCEN), and CG Marine Safety Unit Morgan City extend their sincere appreciation to participants for their contributions to the Morgan City PAWSA workshop.

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CHAPTER 1. GENERAL

A. Background and Purpose

1. The Director of Marine Transportation Systems (CG-5PW) is responsible for developing and implementing policies and procedures that facilitate commerce, improve safety and efficiency, and maximize the commercial viability of the Marine Transportation System (MTS). In the late 1990s, the Coast Guard convened a national dialogue group (NDG) comprised of maritime stakeholders to identify the needs of waterway users with respect to Vessel Traffic Management (VTM) and Vessel Traffic Service (VTS) systems. A major outcome of the NDG was the development of the Ports and Waterways Safety Assessment (PAWSA) process, which the Coast Guard established as the formal model for facilitating stakeholder discussion to identify VTM improvements and determine candidate VTS waterways. The PAWSA methodology has been modernized several times by the CG NAVCEN and Office of Waterways & Ocean Policy (CG-WWM) since its original inception for purposes of creating a more adaptable tool available to Sector Commanders to engage the maritime community to monitor and improve the health of the MTS within their area of responsibility. The most recent PAWSA process update occurred in 2025.

2. The current PAWSA process convenes a select group of waterway users and stakeholders to facilitate a structured workshop agenda to meet pre-identified risk assessment objectives. A successful workshop involves the participation of professional waterway users with local expertise in navigation, waterway conditions, and port safety. Stakeholder involvement is central to ensuring that important environmental, public safety, and economic consequences receive appropriate attention as risk interventions are identified and evaluated. The workshop culminates in a written report that includes proposed risk mitigations developed by participants, which is made publicly available on the CG NAVCEN's website (https://www.navcen.uscg.gov/ports-and-waterways-safety-assessment-final-reports.)

3. The PAWSA process strives to achieve the following objectives:

    a. Gather stakeholder input to identify major waterway trends, safety hazards, and potential mitigation strategies.

    b. Bolster public-private partnership and enhance cooperation across the MTS.

    c. Generate a stakeholder driven report that captures data gathered from the PAWSA to prioritize future projects impacting the MTS.

B. Methodology

1. Waterway Risk Conditions and Waterway Risk Factors. The PAWSA process is designed to convert qualitative experience, observations, and opinions of participants into quantitative assessments. This method utilizes numerical comparison among sixteen WRFs to facilitate consensus among participants to better inform conversations regarding risk mitigation strategies within an identified study area. The Waterway Risk Condition categories and associated WRFs are listed in Table 1 and further defined in Appendix B.

Navigation	Vessel Quality & Operation	Traffic	Waterway
Winds	Large Commercial Vessels	Volume of Commercial Traffic	Dimensions
Currents and Tides	Small Commercial Vessels	Volume of Recreational Traffic	Obstructions
Visibility Restrictions	Commercial Fishing Vessels	Waterway Use	Visibility Impediments
Bottom Type	Recreational Vessels	Congestion	Configuration

Table 1- The four Waterway Risk Condition categories and sixteen WRFs.

2. PAWSA Workshop Structure. The PAWSA workshop is a two-day facilitated process. The following sections provide more detail regarding the structure and goals for each day of a workshop. A maximum of 30 stakeholders divided into 15 two-person teams may participate.

   a. PAWSA Workshop - Day 1.

      (1) WRF Discussion. During the first day of a PAWSA, participants gain a comprehensive understanding of the workshop study area and are led through individual discussions for each WRF identified in Table 1. The purpose of these discussions is to provide a collaborative forum for stakeholders to generate a list of specific challenges unique to their respective port as related to each WRF. The identified issues serve as the starting point for the Day 2 discussions to develop risk mitigations. At the conclusion of Day 1, stakeholders complete a survey that establishes the Risk Characterization for each WRF.

      (2) Risk Characterization Survey. Risk Characterization is a combined qualitative measure of the risk tolerance, risk trend, and effectiveness of existing mitigation

strategies for a specific WRF. Surveys are completed at the end of Day 1 by the established two-person teams. The survey asks teams to evaluate the Current Risk Level, Current Risk Trend, and Current Risk Mitigations to characterize the risk associated with each WRF. Participants select from a pre-populated set of qualitative descriptors that have numeric values assigned to each answer. Table 2 provides the available selections for each Risk Characterization question.

	Available Selections
Current Risk Level	We could accept more risk
	Balanced
	Unacceptable
Current Risk Trend	Decreasing
	Steady
	Increasing
Current Risk Mitigations	Acceptable
	Acceptable, but tenuous
	Unacceptable *(*If unacceptable select all that apply*)
	Not Effective
	Too costly
	Slow operations
	Causes other issues

Table 2 - WRF Survey Risk Characterization categories.

After each team completes the Risk Characterization survey, their assessment of the Waterway Risk Factors is compiled into a Characterization Count. The Characterization Count is crucial because it reflects how each team perceives risk for each WRF. The selected values from the survey generate a color-coded classification that informs the overall WRF Risk Characterization for each team. The results from each team survey are then aggregated together to determine the Characterization Rating for each WRF that represents the consensus of the stakeholder group. The Characterization Rating informs the prioritization of WRFs to guide mitigation development discussions during Day 2 of the workshop.

(3) Characterization Count Color Designations. Individual team Characterization Count for a WRF is designated as red, orange, yellow, or green. For this scale, red represents high risk, orange and yellow are intermediate risks, and green represents low risk. The following subsections outline the thresholds for each color-coded Risk Characterization designation for team Characterization Count.

(a) A WRF is designated with a red Risk Characterization when an individual team determines the WRF Current Risk Level is "unacceptable," or the Current Risk Mitigations are "unacceptable."

(b) A WRF is designated with an orange Risk Characterization when an individual team determines the Current Risk Trend is "increasing" and the Current Risk Mitigations are "acceptable, but tenuous."

(c) A WRF is designated with a yellow Risk Characterization when an individual team determines the Current Risk Trend is "steady" and Current Risk Mitigations are "acceptable, but tenuous."

(d) A WRF is designated with a green Risk Characterization when all other combinations of answers do not meet the threshold for red, orange, or yellow.

(4) Characterization Rating Color Designations. When the teams complete the Risk Characterization survey, their assessments are combined to calculate and assign the overall Characterization Rating for each WRF, as shown as an example in Figure 1.

WRC	WRF	Characterization	Red	Orange	Yellow	Green
Navigational	Winds	Unknown	8			7
Traffic	Congestion	Unknown	5	2		8
Vessel	Large	Unknown	6	1		8
Traffic	Commercial	Red	11	2		2
Vessel	Rec	Red	11	2		2
Navigational	Bottom	Green	5			10
Navigational	Tides	Green	4	2		9
Navigational	Vis	Green	5			10
Traffic	Rec	Green	3	2		10
Traffic	Usage	Green	3	2		10
Vessel	Fishing	Green	4			11
Vessel	Small	Green	3	1		11
Waterway	Config	Green	3	1		11
Waterway	Dims	Green	4			11
Waterway	Obstr	Green	3	2		10
Waterway	Vis	Green	1	1		13

Characterization Count - Individual Team
Red. The Risk Level is Unacceptable OR the Mitigations are Unacceptable.
Orange. The Risk Trend is Increasing AND the Mitigations are Tenuous.
Yellow. The Risk Trend is Steady and the Mitigations are Tenuous.
Green. All others.

Characterization Rating - Overall
Red. 60% or more teams rated as Red.
Orange. 60% or more teams rated as Orange OR 80% or more teams rated Yellow or higher.
Yellow. 60% or more teams rated as Yellow.
Green. 60% or more teams rated as Green.
Unknown. No clear characterization pattern.

Figure 1 – Example Risk Characterization survey results.

Characterization Rating for a WRF is designated as red, orange, yellow, green, or unknown. The color-coded scale for the Characterization Rating is the same as Characterization Count, but the thresholds for attributing the color designation are

different. In Figure 2, the numbers below each of the header columns labeled red, orange, yellow, and green represent the number of individual teams that attributed a certain risk level to that specific WRF. The Characterization Rating for a WRF is determined by plurality. For some WRFs, the determination is "unknown" because there is no strong majority for a particular Characterization Rating. If a WRF is classified with an "unknown" Characterization Rating, participants are encouraged to discuss why the WRF received that designation. The following subsections outline the thresholds for each color-coded Risk Characterization Rating designation.

(a) A WRF is designated with a red, yellow, or green Characterization Rating if 60% or more of teams select that specific rating.

(b) A WRF is designated with an orange Characterization Rating if either 60% or more of teams had an orange rating or 80% or more of teams had a yellow, orange, or red rating.

(c) A WRF is designated with an unknown Characterization Rating if there is less than 60% consensus for any single rating.

b. PAWSA Workshop – Day 2. During the second day of the workshop, PAWSA facilitators present the Risk Characterization survey results and facilitate discussion among participants to determine prioritization of WRF for mitigation development. Stakeholders collaboratively determine the top five WRFs to focus dialogue for mitigation development during the remainder of the workshop. The development of mitigation strategies is guided by facilitators who extract key issues identified during discussions from Day 1. These issues are used as the starting point for participants to collaboratively brainstorm mitigations to address concerns.

CHAPTER 2. MORGAN CITY PAWSA WORKSHOP

A. PAWSA Study Area

1. The geographical area for the Morgan City PAWSA included portions of the Gulf Intracoastal Waterway (GIWW) that crosses the Atchafalaya River, Wax Lake outlet, Bayous Black, Boeuf, Chene, and Shaffer as depicted in Figure 3. The coordinates bounding the Morgan City study area were: 28.054N, 082.325W and 27.506N, 083.027W. Graphic representations of this study area were used to facilitate discussion with participants. Additionally, geographically referenced comments were collected during the workshop and are documented as chartlets in Appendix D.

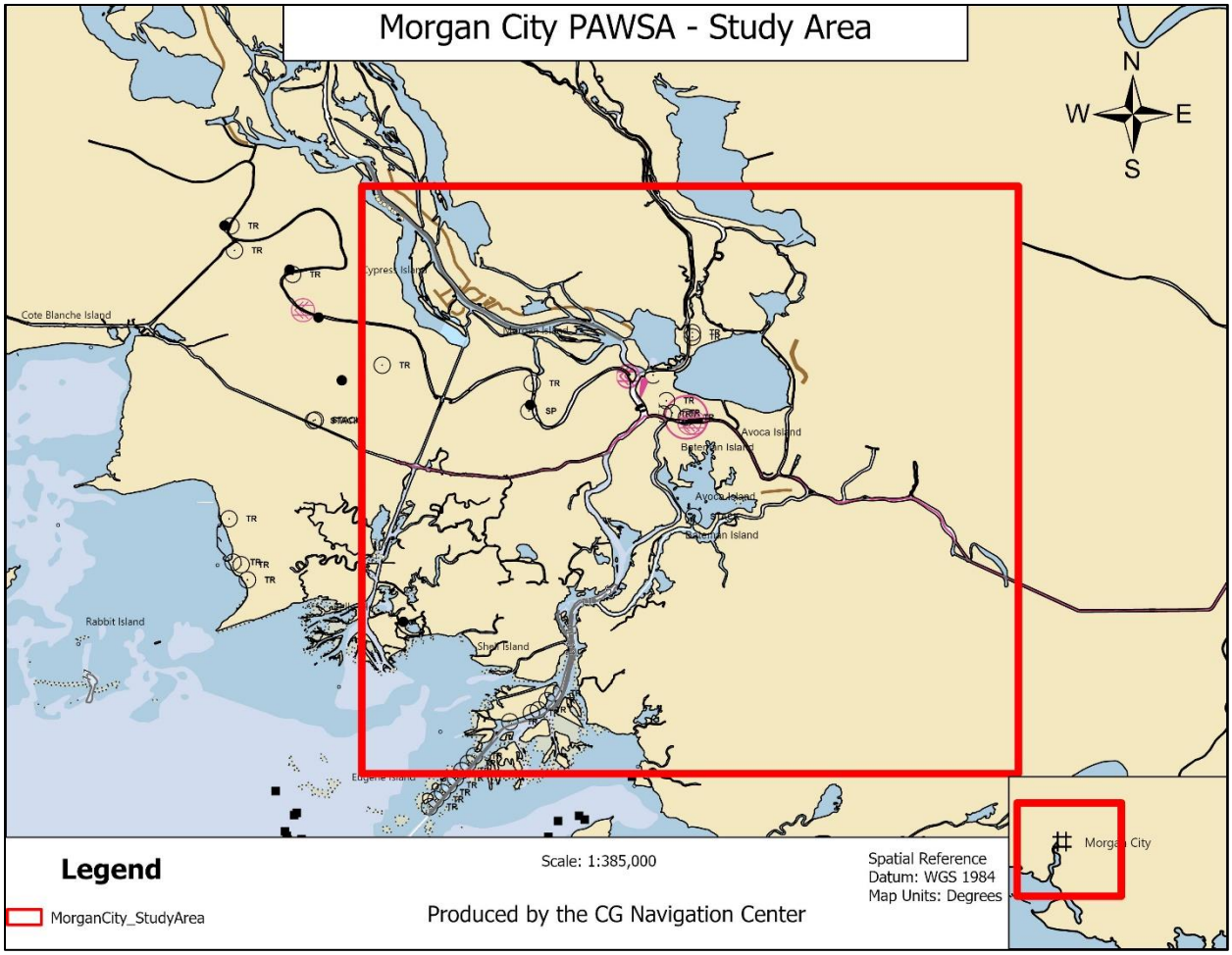

Figure 2- Morgan City PAWSA workshop study area.

B. Participant Validation of WRF Prioritization.

1. The Risk Characterization survey results are depicted below in Figure 3. The results are grouped by Risk Characterization. These results were presented to participants to validate the prioritization order of WRFs for mitigation strategy dialogue and development.

2. The Risk Characterization results indicated a generally low level of existing risk within the Morgan City PAWSA study area, with most WRFs categorized as Green. This favorable risk profile appears to stem from the strong working relationships and proactive communication channels established among stakeholders within the port, preventing many emerging issues from escalating into significant safety concerns. However, the projected growth and increased vitality of the port present potential challenges that warrant proactive mitigation strategies to maintain a safe and efficient waterway environment.

WRC	WRF	Characterization	Red	Orange	Yellow	Green
Navigational	Bottom	Unknown	4	1		7
Vessel	Fishing	Unknown	5			7
Waterway	Obstr	Unknown	3	4		5
Navigational	Tides	Green		1		11
Navigational	Vis	Green	1			11
Navigational	Winds	Green	4			8
Traffic	Commercial	Green				12
Traffic	Congestion	Green	1			11
Traffic	Rec	Green		1		11
Traffic	Usage	Green				12
Vessel	Large	Green		1		11
Vessel	Rec	Green	3			9
Vessel	Small	Green				12
Waterway	Config	Green				12
Waterway	Dims	Green	1			11
Waterway	Vis	Green				12

Characterization Count - Individual Team
Red. The Risk Level is Unacceptable OR the Mitigations are Unacceptable.
Orange. The Risk Trend is Increasing AND the Mitigations are Tenuous.
Yellow. The Risk Trend is Steady and the Mitigations are Tenuous.
Green. All others.

Characterization Rating - Overall
Red. 60% or more teams rated as Red.
Orange. 60% or more teams rated as Orange OR 80% or more teams rated Yellow or higher.
Yellow. 60% or more teams rated as Yellow.
Green. 60% or more teams rated as Green.
Unknown. No clear characterization pattern.

Figure 3- Risk Characterization survey results for all WRFs.

Following subjective evaluation, participants selected Winds, Bottom Type, Commercial Fishing Vessels, Obstructions, and Dimensions as the most significant WRFs that contributed to potential incidents in the Morgan City PAWSA study area. A consensus vote amongst participants determined the ranking of WRFs according to their level of concern. Table 3 presents WRFs in descending priority order from high to low. Mitigation strategies were discussed and developed in this order.

Waterway Risk Category	WRF
Navigation	Winds
Navigation	Bottom Type
Traffic	Commercial Fishing Vessels
Waterway	Obstructions
Waterway	Dimensions

Table 3- Validated and prioritized WRFs listed from top to bottom.

C. Risk Mitigation Strategies

1. The validated list of WRFs was used to prioritize discussion and development of risk mitigation strategies. Facilitators directed participants to capture potential mitigation strategies on sticky notes, which were then consolidated and grouped to identify major themes. From this bank of action items, participants were encouraged to create specific, measurable, actionable, realistic, and timebound (SMART) goals as well as general goals. Both types of mitigation strategies developed by participants are represented in this report. Recommended mitigation strategies documented in this section received consensus among workshop participants. Mitigation strategies are documented in order of significance to participants.

2. Participant comments are listed in Appendix C of this report and are referenced throughout this subsection to provide support of documented developed mitigation strategies.

3. <u>WRF – Winds.</u>

    a. Limited wind gauge coverage and suboptimal placement of existing sensors, particularly in critical locations such as Stouts Pass and Morgan City Triple Span bridges, hinder the availability of accurate wind data. Workshop participants noted that insufficient wind monitoring was likely contributing factor for vessel allisions during entry and docking maneuvers in the Bayou Boeuf Locks that resulted in infrastructure damage. Additionally, winds sustained at 25 knots, or gusts reaching 40 knots, require securing the Berwick Bay Bridge in the down position. This further highlights the need for real-time wind information. Participants recommended the following mitigation strategies:

        (1) Request the National Oceanic and Atmospheric Administration (NOAA) procure, install, and maintain wind sensors in high-priority areas. These locations include Stouts Pass, Berwick Bay Bridge (Railroad Bridge), E.J. Lionel Grizzaffi Bridge

(Highway 90 Bridge), and Long Allen Bridge (Highway 182 Bridge), Jessie Fontenot Memorial Boat Landing area (Mile Marker 99) on the GIWW, and Rig Museum "Mr. Charlie" area (20 Grand Point)/

(2) Pursue collaborative partnerships with nonprofit organizations and academic institutions to facilitate sensor installation on existing Aids to Navigation structures.

(3) Establish a local Harbor Safety Committee (HSC) to lead and coordinate the following mitigations:

(a) Identify and secure funding for future port projects.

(b) Ensure public accessibility of wind data through press releases and social media channels.

(c) Develop and deliver targeted training programs for vessel operators addressing localized wind hazards, with an emphasis on procedures for lock entry and exit operations.

(4) Employ assist vessels during Bayou Boeuf lock operations when sustained wind speeds exceed 25 knots to improve maneuverability and mitigate collision risks.

4. <u>WRF – Bottom Type.</u>

a. Extensive shoaling, particularly in Stouts Pass, pose ongoing navigational challenges and increase the risk of vessel groundings. Sediment flow downstream was identified as a primary contributor for rapid shoaling. Limited surveying capacity has delayed waterway assessments for shoaling caused by flooding events in the Midwest that carry sediment down river. Participants recommended the following mitigation strategies:

(1) Advocate for sustained U.S. Army Corps of Engineers (USACE) funding for routine maintenance and dredging operations within Stouts Pass and Berwick Bay.

(2) Explore the feasibility of a rock-off or dike solution at Little Island Pass to preserve channel flow and reduce sediment accumulation.

(3) Collaborate with the Pipeline and Hazardous Materials Safety Administration (PHMSA) to assess pipeline depth at Little Island Pass and pursue federalization of the pass to secure funding for pipeline burial or relocation.

(4) Reopen the 2006–2007 feasibility study to assess the viability of installing underwater dikes on the Berwick side of Berwick Bay Harbor.

(5) Coordinate with the Louisiana Coastal Protection and Restoration Authority (CPRA) to support long-distance sediment pipeline projects aimed at enhancing sediment management.

(6) If an HSC is created, have members promote public awareness of USACE studies and mitigation efforts through HSC outreach initiatives, including social media and public press announcements.

(7) If an HSC is established, identify potential funding sources for additional post-assessment severe weather and survey assets such as sonar equipped vessels to expedite navigational channel assessments.

(8) Re-engage with congressional representatives and relevant Coast Guard entities, including Coast Guard Atlantic Area and Eighth Coast Guard District, to reestablish a small boat station in Morgan City Louisiana.

5. WRF – Commercial Fishing Vessels.

a. The absence of standardized inspection and licensing requirements for commercial fishing vessel operators has contributed to inconsistent safety practices and limited regulatory oversight. Participants also cited a growing number of derelict or sunken vessels due to fleet deterioration and maintenance neglect. Participants recommended the following mitigation strategies:

(1) Submit a request through MSU Morgan City for the Coast Guard Office of Fishing Vessel Safety (CG-CVC-3) to conduct an analysis to identify regulatory gaps and discrepancies between the existing commercial fishing vessel safety examination framework the goal of the standardized inspections for all commercial fishing vessels.

(2) Submit a request through MSU Morgan City for the Coast Guard Office of Merchant Mariner Credentialing (CG-MMC) to assess the adequacy of current credentialing requirements for commercial fishing vessel operators.

(3) Increase the frequency of MSU Morgan City hosted industry days to promote safety compliance, build partnerships, and foster communication within the commercial fishing community.

b. Participants observed an increase in inadequate radio responses and communications from commercial fishing vessel operators. This problem is significantly exacerbated by a combination of federal and state regulations. At the federal level, 47 CFR 80.1001 exempts vessels under 20 meters from the radio requirements of the Bridge-to-Bridge Act, even when actively engaged in commercial fishing as defined in 46 CFR 28.50. Furthermore, per 46 CFR 28.200 and 46 CFR 28.245, VHF radiotelephones are only mandated on vessels operating beyond the boundary line, carrying more than 16 passengers, or functioning as fish tenders in the Aleutian trade. The practical consequence, observed by those familiar with the area, is that many Louisiana crab and crawfish boats, which are frequently under 20 meters in length, operate inside the boundary line and below the tonnage requirement for federal documentation, either lack radios or do not respond to radio calls. For these vessels, the state maintains jurisdiction for dictating radio requirements. Critically, Louisiana state law currently does not mandate radios on state-registered fishing boats. This creates a situation where a substantial portion of the Louisiana fishing fleet is unable to receive urgent safety warnings or effectively call for assistance during emergencies. Radios are only listed as a recommendation from the Louisiana Department of Wildlife and Fisheries on state registered vessels. Participants recommended the following additional mitigations:

(1) Petition Louisiana state representatives to amend state statute to require all state-registered commercial fishing vessels to carry functioning radios, regardless of length or tonnage. Implementation of this requirement would establish a fundamental safety standard and dramatically improve communication in the Louisiana MTS.

(2) Leverage parish ordinances to educate and prevent derelict commercial fishing vessels from breaking away from moorings which often drift into VTS zone and create navigation hazards.

6. WRF – Obstructions.

   a. Submerged and unsecured obstructions, including sunken vessels, barges, and dredge pipes, pose serious hazards to navigation, especially during extreme weather events. Participants recommended the following mitigation strategies:

      (1) Prior to anticipated extreme weather events, identify and secure designated staging and fleeting areas for dredge pipe storage. This requires obtaining landowner consent for the use of their property. Upon securing consent, coordinate with USACE and NOAA to update navigational charts accordingly.

      (2) Enforce mandatory lighting requirements for all inactive or staged dredge pipes to improve nighttime visibility and hazard awareness.

      (3) Advocate for the creation of a statewide or national derelict vessel disposal program, potentially modeled after a "cash for clunkers" incentive system. Include a hotline or digital platform for reporting and facilitating responsible vessel disposal.

      (4) Deploy aerial drones from MSU Morgan City to detect and report hazardous floating objects, including unmoored fish camps and oil well deadheads.

      (5) Engage local volunteer groups (e.g., USCG Auxiliary) in public education campaigns and community outreach regarding these obstructions.

      (6) Use Self-Locating Datum Marker Buoys (SLDMBs) for real-time tracking of floating hazards and ensure timely issuance of Marine Information Broadcasts.

      (7) Coordinate with Louisiana Department of Wildlife and Fisheries (LDWF) agencies to notify houseboat owners of required lighting standards and amplify outreach through the U.S. Coast Guard's Morgan City social media platforms.

7. WRF – Dimensions.

   a. Narrow and shallow channels in key navigation routes, including Bayou Chene and the Atchafalaya River, significantly reduce vessel maneuverability and delay commercial transit. Dredging efforts are limited by constrained equipment availability. Participants recommended the following mitigation strategies:

      (1) Forge additional partnerships with state and federal entities for the ongoing Bayou Chene dredging project aimed at widening the channel from 300 feet to 400 feet. The estimated project completion timeline is one year, pending favorable weather conditions.

(2) If established, leverage the HSC to continue advocacy for state and federal investment of dredging projects along the Atchafalaya River and its associated tributaries.

(3) Pursue increased federal funding to expand the USACE dredging fleet to reduce GIWW closure times and address critical navigation chokepoints, including Stouts Pass and Bayous Boeuf, Black, and Chene.

Appendix A. Workshop Participants

Participant	Organization
1. Roger Beaudean	Atchafalaya Intracoastal Coalition
2. Dallas Theriot	American Commercial Barge Line
3. David Clements	Central Boat Rental
4. James Leonard	Enterprise Marine Services
5. Karl Comeaux	Kirby Inland Marine
6. Cameron Culpepper	LeBeouf Bros Towing/GICA
7. Vaughn McDaniel	LeBeouf Bros Towing/GICA
8. Garrett Kimble	Louisiana Department of Wildlife and Fisheries Enforcement Division
9. Jake Darden	Louisiana Department of Wildlife and Fisheries Enforcement Division
10. Marcus Henderson	Modern American Recycling Services
11. Cindy Cutrera	Port of Morgan City
12. Les Rulf	Port of Morgan City
13. Mac Wade	Port of Morgan City
14. Paul Dittman	President, Gulf Intracoastal Canal Association
15. Mark Zerangue	Rio Fuel & Supply
16. James Ducote	Tidewater Marine
17. Randy Daigle	U.S. Army Corps of Engineers
18. Robby Swayze	U.S. Army Corps of Engineers
19. Timothy Connell	U.S. Army Corps of Engineers
20. LaDon Champine	U.S. Army Corps of Engineers (Boeuf Lock)
21. Shane White	U.S. Army Corps of Engineers (Boeuf Lock)
22. Gabriel Bosman	United States Coast Guard
23. Gary Hutchison	United States Coast Guard
24. Harry March	United States Coast Guard
25. Joe Pasqua	United States Coast Guard
26. Timothy Veach	United States Coast Guard

Appendix B. Waterway Risk Model Terms and Definitions

A. Waterway Risk Conditions and WRF Definitions. The Ports and Waterway Safety Assessment (PAWSA) Waterway Risk Model utilizes sixteen WRFs categorized under four Waterway Risk Conditions. Definitions for each Waterway Risk Condition and their associated WRF are defined in this section.

1. Waterway Risk Condition - Navigation. The environmental conditions that affect vessel navigation, such as wind, currents, and weather.

    a. WRF -Winds. The difficulty in maneuvering vessels resulting from increased and unpredictable winds, particularly if the wind is from abeam.

    b. WRF - Tides and Currents. The difficulty in maneuvering vessels caused by water movement flow and speed, often affected by seasonal variations and sustained winds. Tide rips and whirlpools can be created by strong currents and affect the maneuverability of smaller vessels. The frequency of occurrence and the location of the strongest currents in the waterway are critical considerations (e.g., if current speed can exceed vessel speed, timing is critical when transiting the area).

    c. WRF - Visibility Restrictions. The natural conditions that may prevent a mariner from seeing other vessels, aids to navigation, or landmarks, such as fog, severe rain squalls, etc.

    d. WRF - Bottom Type. The material on the waterway bottom or just outside the channel, such as hard rock, mud, coral, etc.

2. Waterway Risk Condition - Vessel Quality and Operations. The quality of vessels and their crews that operate on a waterway. Each waterway has what are considered to be high risk vessels, such as old vessels, vessels with poor safety records, vessels registered in certain foreign countries, vessels belonging to financially strapped owners, vessels with inexperienced crews and operators, etc. When assessing risk, the following items should be considered (as appropriate) for each risk factor: maintenance, age, flag, class society, ownership, inspection record, casualty history, language barriers, fatigue related issues, and local area knowledge.

    a. WRF - Large Commercial Vessels. The quality of the large commercial vessel itself and the proficiency and quality of the crew. Large vessels are those ocean-going vessels, often in international trade, that usually are constrained by their draft to use dredged channels where such channels exist. Large vessels include such things as: oil tankers, container ships, break bulk cargo ships, and cruise liners.

    b. WRF - Small Commercial Vessels. The quality of the small commercial vessel itself and the proficiency and quality of the crew. Small vessels include all other commercial craft EXCEPT commercial fishing vessels. Examples

include tugs and towboats, offshore supply vessels, charter fishing boats, and small passenger vessels (inspected under 46 CFR Subchapters T and K), such as dinner cruises and ferries.

c. WRF - Commercial Fishing Vessels. The quality of the commercial fishing vessel itself and the proficiency and quality of the crew. These vessels are included because they are not required to undergo annual vessel inspections nor are the crewmembers required to hold USCG licenses; therefore, there may be a greater potential for increased incidents involving commercial fishing vessels.

d. WRF - Recreational Vessels. The quality of the recreational vessel itself and the proficiency and operating knowledge of the individuals who operate them. Recreational vessels include all boats used for noncommercial purposes (e.g., pleasure craft or craft used by indigenous people for transportation or subsistence fishing). They can be powered by an engine, the wind, or human exertion. Examples include yachts, personal watercraft (a.k.a., jet skis), and kayaks.

3. Waterway Risk Condition - Traffic Conditions. The number of vessels that use a waterway and their interactions.

a. WRF - Volume of Commercial Traffic. The amount of commercial vessel traffic using the waterway (i.e., the more vessels there are on the water, the more likely that there will be a marine casualty). Deep draft and shallow draft commercial vessels as well as commercial fishing vessels are included in this risk factor. Shoreside infrastructure is also addressed in this risk factor (i.e., can it handle the volume of commercial traffic within the waterway).

b. WRF - Volume of Recreational Traffic. The amount of non-commercial vessel traffic using the waterway. The volume may vary depending on the time of day, the day of the week, the season of the year, or during a major marine event.

c. WRF - Waterway Use. The interaction between vessels or boats of different sizes using the same waterway and their maneuvering characteristics. Conflicts occur as risk increases with each type of vessel's maneuvering characteristics and actions that are often different and unpredictable (e.g. commercial mariners and recreational mariners using deep draft vessels and shallow draft vessels within the same waterway).

d. WRF - Congestion. The ability of the waterway to handle the volume and density of traffic. Risk increases when a large number of vessels uses a small geographic area for an extended period of time. Risk also increases substantially when you get a larger than normal number of vessels together for a short time (e.g., fishing tournament or short season commercial fishery).

4. Waterway Risk Condition - Waterway Conditions. The physical properties of the waterway that affect vessel maneuverability.

    a. WRF - Visibility Impediments. The man-made objects (e.g., moored ships, condominiums, background lighting, etc.) or geographic formations (e.g., headlands, islands, etc.) that prevent a mariner from seeing aids to navigation or other vessels.

    b. WRF - Dimensions. The room available for two vessels to pass each other within the waterway.

    c. WRF - Obstructions. Floating objects in the water that impede safe navigation and could damage a vessel, such as ice, debris, fishing nets, etc. This also includes fixed objects such as wrecks, pipelines, overhead wires, derelict piers, fixed bridges, and permanently moored vessels.

    d. WRF - Configuration. The arrangement of a waterway, including elements such as waterway bends, multiple and converging channels, and perpendicular traffic flow.

Appendix C. Participant Comments

A. Background.

1. This appendix documents participant observations and recommendations expressed during the workshop with respect to specific issues of concern within the study area. Discussion during the first day of the workshop was recorded and subsequently transcribed using professional services. Comments were compiled and categorized by most applicable Waterway Risk Condition and WRF.

B. Waterway Risk Condition - Navigation.

1. WRF – Winds.

a. The current wind gauge infrastructure in the region is insufficient to support safe and effective navigation for commercial vessels through VTS in Berwick Bay. The only wind sensor in the area is located near Stouts Pass on the Atchafalaya River. The absence of real-time, location-specific wind data poses significant risks to marine traffic. This is especially prevalent during high wind events when vessel control and navigation are increasingly difficult.

b. Sustained winds exceeding 25 knots frequently trigger operational shutdowns by VTS. These conditions severely impair vessel maneuverability, particularly in narrow channels and choke points, where empty tows are most vulnerable.

c. Strong winds significantly complicate lock entry and docking at Bayou Boeuf Locks. These winds often cause structural damage to guide walls, pilings, and other navigational infrastructure, causing increased maintenance demands and vessel damage. Navigational situational awareness and safety margins are reduced because mariners solely rely on secondhand reports or distant sensors in the absence of access to real-time and accurate wind data.

d. There is an urgent need for additional wind sensors at locations including the Berwick Bay Bridge (Railroad Bridge), E.J. Lionel Grizzaffi Bridge (Highway 90 Bridge), Long-Allen Bridge (Highway 182 Bridge), Stouts Pass, and Rig Museum “Mr. Charlie” area (20 Grand Point). These areas frequently experience hazardous wind conditions that affect vessel handling, especially for empty tows navigating tight turns and confined waterways. While stakeholders such as National Oceanic and Atmospheric Administration (NOAA) and United States Army Corps of Engineers (USACE) may assist in addressing sensor deployment, long-term maintenance remains a significant concern.

e. Assist vessels are often required to help manage vessel operations during high wind situations, but their effectiveness is sometimes limited due to horsepower mismatches. Operators must assess horsepower adequacy before deployment to ensure safety. In the absence of formal wind regulations, mariners rely on informal agreements to determine operational thresholds.

f. There is a lack of clear ownership and access protocols for real-time wind data. Participants emphasized the importance of expanding data accessibility, especially for recreational vessels to support broader maritime safety.

2. WRF - Tides and Currents.

a. Tides and currents in the vicinity of Jessie Fontenot Memorial Boat Landing area (Mile Marker 99) on the Gulf Intracoastal Waterway (GIWW) and the Berwick Bay Railroad Bridge significantly impact navigation due to the absence of real-time current data. Mariners operating in the area rely on current predictions, which are often insufficient for safe and efficient vessel movement. This is especially prevalent during periods of high or low water levels associated with storm events. Rise and fall of the water levels in Morgan City are primarily influenced by other environmental factors and not cyclical tides. Availability of real-time current data will enable safer vessel navigation during events that affect water levels on the GIWW.

b. The convergence of the GIWW in the region produces highly dynamic and unpredictable water levels, leading to strong crosscurrents that complicate vessel maneuverability during lock approaches and transits. These challenges are particularly pronounced near Wax Lake Outlet/Calumet Cut.

c. VTS representatives noted that the lack of real-time current and wind data reduces the effectiveness of operational coordination. Mariners are frequently relied upon to report conditions verbally, increasing crew workload and decreasing response efficiency during high-current events.

d. Seasonal increases in current on the GIWW contribute to decreased waterway depths and compound existing navigational risks. Vessels equipped with thrusters are vulnerable to reduced maneuverability in shallow areas because thrusters risk surfacing and reducing navigational control of the vessel.

e. Aids to Navigation (ATON) in the area, including Wax Lake Outlet intersection with the GIWW and Stout's Pass on the Atchafalaya River, are reported to shift positionally during periods of elevated water levels and strong currents. These discrepancies diminish navigational precision and increase the risk of grounding or collision, particularly for towing vessels pushing barges.

f. High-water conditions reduce navigable margins, increase cross-traffic complexity, and heighten the likelihood of visibility limitations and collision risks. Participants emphasized the need for improved planning for fleeting and staging in high-current areas, as well as installation of real-time current meters to enhance situational awareness and safety.

3. WRF – Visibility Restrictions.

a. Decorative and facility lighting, including floodlights directed at waterways from shipyards, bridges, and industrial facilities, create significant nighttime visibility hazards. These lights impair mariner vision and obscure ATON, particularly in high-traffic areas.

4. WRF – Bottom Type.

a. On the Atchafalaya River, shoaling remains a persistent challenge at Stouts Pass during low water. The predominantly sandy bottom exacerbates shoaling during these conditions. Constant shifting of silt and sand in the channel requires vigilant navigation to avoid shoals. In contrast, areas east of the Bayou Boeuf locks experiences less shoaling because the bottom type is less sandy.

b. The Morgan City waterway is impacted by runoff from 37 upstream states. This northern watershed carries various forms of sediment southward, contributing to increased shoaling in the waterway.

c. Further resources are needed to support more frequent and comprehensive waterway surveys following storm events and post high/low water seasons to enable safe and efficient navigation.

C. Waterway Risk Condition - Vessel Quality and Operations.

1. WRF - Large Commercial Vessels.

a. There is an increase in stateless, abandoned, and poorly maintained vessels in the region. These vessels arrive with foreign crews under unclear ownership, due to failed sales or bankruptcies, and remain docked in the area long-term. Crews are frequently unpaid and confined, leading to neglect and serious safety risks. This is prevalent during storms when these vessels pose an increased risk of drifting into active navigational channels. Although these vessels enter with valid documentation, extended lay-ups often result in expired class certificates, flag deregistration, and repatriation challenges.

b. The increasing number of stateless vessels presents a heightened risk of maritime incidents, including potential vessel sinkings, onboard fires, and uncontrolled drift. Due to the absence of routine oversight and maintenance, these vessels are prone to structural failure and may break free from anchorage or drift into navigational lanes, posting a risk to collision or environmental hazards. The lack of identifiable ownership impedes mitigation and emergency response efforts.

2. WRF - Small Commercial Vessels.

a. A significant portion of the small commercial vessel workforce consists of captains with less than two years of local maritime experience. This trend is largely attributed to the retirement of experienced mariners, resulting in a substantial loss of institutional knowledge and operational familiarity. A large portion of these less experienced mariners have never transited through the Triple Bridge Complex in Morgan City, which poses unique challenges during high water conditions.

b. There is a concern regarding the accuracy of vessel type and dimensions provided by Automatic Identification System (AIS) data. Inaccurately transmitted AIS information creates confusion during navigation situations when mariners expect one type of vessel but encounter a different one entirely based on AIS data. Participants expressed this discrepancy is especially prevalent among towing vessels, which often fail to update towing configuration detail. This contributes to confusion and navigational safety hazards in congested and narrow navigational channels.

3. WRF - Commercial Fishing Vessels.

a. The population of large commercial fishing vessels in the region is declining, with no significant fleet operating at scale. Economic hardship and other systemic challenges have contributed to the shrinking local fleet. Remaining vessels are frequently under-maintained, with upkeep issues driven by resource constraints rather than improvements in maintenance practices. Two recent vessel sinkings underscore the severity of these deficiencies and the potential for catastrophic outcomes.

b. Many commercial fishing vessel operators are not subject to licensing requirements, which contributes to inconsistent safety and operational standards. The absence of mandatory licensing or formal training for certain sizes of fishing vessels further hinders the development of a strong safety culture within the sector.

c. The variability in vessel condition and operator experience is compounded by the lack of regulatory oversight, for vessels not subject to Coast Guard inspection. Resulting gaps in safety and enforcement create persistent challenges for risk mitigation within the local Maritime Transportation System (MTS).

4. WRF - Recreational Vessels.

   a. Operator proficiency and the condition of recreational vessels significantly impact safety within the port. While most recreational vessels pose minimal risk, the increased presence of makeshift, unregulated river houseboats present a unique and growing hazard to the waterway.

   b. Houseboats are usually permanently uninhabited, not designed for maritime navigation, and lack essential safety features such as proper lighting, propulsion systems, and communications equipment. As a result, they are frequently found adrift in active navigation channels, creating a substantial collision risk, particularly for large downbound commercial vessels with limited maneuverability.

   c. Houseboat operators are not credentialed mariners. Incidents involving unpowered or unlit river houseboats have been linked to multiple fatalities, with reports indicating an average of two deaths per year. These vessels have contributed to significant navigational safety concerns, MTS disruptions, and navigational channel blockages.

   d. The presence of houseboats creates a significant challenge for waterway management. This challenge is further complicated by the fact that many recreational boaters do not adequately read or review Local Notice to Mariners, resulting in a heightened level of navigational ambiguity and an elevated risk profile.

D. Waterway Risk Condition - Traffic.

1. WRF - Volume of Commercial Traffic.

   a. The volume of commercial vessel traffic within the port is increasing, particularly inside the VTS zone. However, the absence of designated fleeting areas contributes to congestion and complicates the management of vessel movements during peak periods.

   b. VTS considers ten or more vessels awaiting transit or system entry a serious traffic condition that places substantial strain on coordination and traffic flow management resources.

   c. Extended Bayou Boeuf lock closures, particularly for construction-related maintenance lasting up to 12 hours, results in significant congestion. VTS has reported instances where more than 50 commercial vessels were held in standby positions, leading to major delays and reduced navigational efficiency.

   d. Dredging operations, are critical for maintaining channel depth, but are a recurring source of disruption to vessel movement. These operations temporarily restrict navigation and contribute to localized congestion.

e. Traffic density is influenced by mariner preference for familiar or perceived safer routes. Fishing vessels, shrimpers, and other operators lacking local knowledge tend to concentrate traffic in common corridors and exacerbate congestion in these areas.

2. WRF - Volume of Recreational Traffic.

a. Recreational traffic in the area remains consistently dense, with notable congestion during morning hours at Joe C. Russo Memorial Boat Landing, on the Port Allen route, and Jessie Fontenot Memorial Boat Landing, at Mile Marker 99 on the GIWW. Participants noted that delays are often caused by a high number of users launching personal watercraft, as well as increased traffic along the Port Allen route. These locations serve as key choke points and present logistical challenges during peak activity periods.

b. Large-scale marine events, such as the Louisiana Shrimp & Petroleum Festival intensify recreational vessel traffic. The event, especially during its fireworks display, results in temporary waterway closures and a significant surge in vessel activity. There is a need for increased coordination and enforcement to manage traffic and ensure safety during these high-demand periods.

3. WRF - Waterway Use.

a. There is a need for improved waterway traffic strategies to manage the cumulative effect of oversized tow operations and proactively mitigate infrastructure vulnerabilities.

b. Ongoing salvage operations and dead-ship tows occur regularly outside the VTS Zone, on the Atchafalaya River, Bayou Chene, and Bayou Black. These operations average 5 to 6 tows per week, many of which involve oversized vessels that occupy a significant width of the channel. These events cause congestion and limit the ability of other vessels to pass safely.

c. The recent presence of SpaceX, which used the port over a 4- to 5-month period for barge and equipment repairs, demonstrated the waterway's capacity to support diverse industrial space and atmospheric operations. However, it also highlighted the constraints of current infrastructure when accommodating non-traditional or high-volume usage.

d. Damage to the Bayou Boeuf locks would disrupt navigation, amplify congestion, and undermine overall system reliability.

4. WRF – Congestion.

   a. The three-way intersection at Mile Marker 99 is managed by the VTS and is a primary congestion point within the waterway. This intersection experiences heavy volumes of marine traffic. Limited navigational space of this waterway contributes to delays and increased risk of collision during peak transit periods.

   b. Congestion at Mile Marker 99 is exacerbated by external factors such as high-water levels and adverse weather. These types of events cause restrictions in vessel maneuverability and necessitate the use of assist vessels to safely navigate. The limited availability of assist vessels during these events results in vessel traffic delays.

   c. Bayou Boeuf Lock closures, both scheduled and unscheduled, are a recurring source of disruption. These events force vessels to reroute through Bayou Chene, often adding a 30 NM detour, which contributes to extended transit times and places additional strain on already congested areas such as Mile Marker 99, on the Atchafalaya River.

E. Waterway Risk Condition – Waterway.

1. WRF – Dimensions.

   a. The Bayou Chene channel lacks the necessary width to support the growing size of vessels transiting to the scrapyard. A minimum width of 400 feet is required to extend from Bayou Chene through Bayou Boeuf. The current dimensions restrict efficient passage and contribute to navigation delays and safety concerns.

   b. The USACE emphasized the need for sustained dredging efforts in Bayou Boeuf and Bayou Chene.

   c. The Atchafalaya River, between mile 113 to mile 167, is a high-priority area for maintenance dredging. However, funding constraints have limited the USACE's ability to conduct regular dredging operations, leading to degraded channel conditions and increased risk of grounding incidents.

   d. The Atchafalaya River, particularly around Stouts Pass, contains several shoaling hotspots that demand regular and consistent dredging. The presence of sandbars and shifting sediments, that impede safe navigation are worsened by storm activity and high/low water levels. Without sustained maintenance, the Coast Guard often imposes draft restrictions which effectively "close" the waterway and impact the flow of commerce.

e. Current dredging capacity is inadequate to respond promptly to post-storm and high/low water events. In the aftermath of hurricanes, delays in dredging operations frequently result in temporary closures of critical MTS corridors, causing substantial disruptions to supply chain and economic hardships. An increase in the number of available dredging vessels is essential to ensure the timely restoration of navigable conditions.

f. There is a critical need to maintain adequate channel depth because vessels with thrusters experience reduced maneuverability at depths of 12 feet or less. In shallower waterways, thrusters risk surfacing and significantly reduce a vessels navigational control.

g. Sharp bends throughout the MTS complicate navigation, in high-traffic zones. These natural features require careful vessel maneuvering and heightened situational awareness, contributing to operational delays and the increased risk of marine incidents.

2. WRF – Obstructions.

a. Participants raised concerns about the presence of dredge pipes in Bayou Black, which pose a significant navigational hazard during active dredging operations. These pipes are often staged along the waterway in designated dredge pipe fleeting/storage areas and can become unintentionally unmoored. The absence of adequate lighting along these pipes, especially at night, increases the danger of vessels navigating the area.

b. Logs and oil well deadheads following storm events are a recurring issue that pose significant risks to navigation because they are often partially submerged and difficult to detect. The VTS has identified these types of storm debris as major contributors to marine casualties.

c. Two sunken shrimp boats in Berwick Bay are currently not classified as obstructions, but are being monitored due to their potential to shift positions. These vessels occupy valuable pier space along the navigable waterway and within Berwick Bay. The movement of these vessels would disrupt vessel traffic or create safety concerns.

d. The closure of the floodgate on Bayou Chene during hurricanes to manage water levels creates significant bottlenecks for vessels. This closure restricts access to the waterway, unless Bayou Boeuf remains open, and poses challenges for efficient vessel transit during extreme weather events. Coordination between these two structures is crucial for maintaining uninterrupted flow of traffic during emergencies.

e. The presence of pipelines in Stouts Pass narrows the already constrained waterway, making navigation increasingly difficult for vessels. The limited maneuvering space, compounded by the pipeline obstruction, poses a persistent safety concern for both commercial and recreational traffic in this section of the waterway.

3. WRF – Visibility Impediments

a. Dry docks and moored vessels extending beyond standard channel boundaries during high-water stages are significant visibility and maneuverability challenges. These obstructions reduce margins for error, particularly for downbound traffic. Although the U.S. Coast Guard and USACE set protrusion limits, enforcement and operator awareness under variable river conditions remain inconsistent.

b. Decorative and facility lighting, particularly floodlights and spotlights pointed toward the waterway, are major visibility hazards. Such lighting causes glare and temporary blindness, making it difficult for mariners to distinguish ATON and navigate safely at night. Areas of concern include bridges and facilities east of Bayou Bouef Lock. Improperly angled lights from moored vessels and shipyards were identified as recurring issues.

c. There is a regulatory gap regarding oversight of non-navigational lighting. While the U.S. Coast Guard regulates navigational lighting, it lacks authority over facility lighting, which can create significant safety risks. Resolution typically requires direct engagement with facility operators or submission of complaints to the VTS.

d. Bridge structures, particularly the Highway 90 Bridge, Highway 182 Bridge, and the Berwick Bay Railroad Bridge, were highlighted for visibility and maneuverability concerns. Misaligned bridge structures spanning narrow channels reduce visibility and restrict safe transit.

e. The Highway 182 bridge is more than a century old and is a persistent barrier to safe navigation due to its alignment and proximity to adjacent bridges. The bridge is preserved for historical reasons and provides a one-way traffic route for vehicles during storm evacuation. However, the bridge limits air draft for transiting vessels to less than 55 feet. Underscoring ongoing safety concerns, VTS Berwick Bay has recorded several instances where mariners nearly collided with the bridge due to low clearance.

f. The area known as Mile Marker 99 on the GIWW is a key convergence point where traffic enters from three directions. Limited visibility and reaction time in this area significantly elevate the risk of collision.

g. Sandbar accumulation in areas including 20 Grand Point, Tidewater Point, Morgan City Docks, and the Highway 182 Bridge create navigational concerns. These sandbars often form along the slack side of the river and present grounding risks, particularly for operators unfamiliar with local conditions. While some sandbars are intentionally maintained as breakwaters, others are unmarked and hazardous.

4. WRF – Configuration.

a. The proximity and interdependency of the Bayou Chene Floodgate and the Bayou Boeuf Lock create a significant operational vulnerability within the GIWW. In scenarios of high-water or storm conditions, both structures can close simultaneously, resulting in a complete shutdown of east to west navigation. This creates a single point of failure, which, although rare, has previously caused substantial disruption to commercial traffic. The closure of both structures halts the flow of goods and impedes the MTS, affecting regional economic activity.

b. The restriction of oversized tow movements through the Bayou Boeuf Lock, particularly during the closure of the Bayou Chene Floodgate, creates logistical challenges. When the floodgate is closed, oversized tows are rerouted via alternate paths, leading to delays in cargo delivery and increased operational costs. This bottleneck is a recurring concern that directly impacts delivery timelines and efficiency for commercial operators.

c. Inactive, laid-up, or cold stacked vessels, in Berwick Bay and Amelia, reduce maneuverability and limit access to critical docking areas. These vessels do not obstruct navigation during normal conditions, but become significant obstacles during peak operational periods or weather events. Their continued presence in high-traffic areas restricts operational throughput and presents potential risks to both safety and efficiency.

d. Stouts Pass and the adjacent Berwick Bay region present significant navigational challenges due to their narrow passageways, high traffic density, and outdated hydrographic data. These areas frequently become choke points, especially during dredging or maintenance activities, raising the risk of vessel collisions and delays. Enhanced situational awareness and up-to-date navigational information is necessary to mitigate risk and improve traffic flow in these critical areas.

e. Participants indicated that buoys in Stouts Pass are frequently off-station. However, the local ATON unit representative reported receiving few notifications regarding this issue.

f. ATON, such as dayboards and range markers, suffer from visibility issues due to overgrown vegetation, wildlife interference, and insufficient maintenance. In areas with winding channels, obscured ATON compromises safe navigation. Regular maintenance, including vegetation clearing and wildlife management, is essential to ensure these markers remain visible and reliable for mariners.

g. The lack of timely updates for submerged obstructions and pipeline alignment issues, in areas like Stouts Pass, presents a significant risk to vessel safety. Incomplete or outdated marine charts fail to reflect recent changes in the waterway. These changes, specifically submerged obstructions and pipelines, become unanticipated hazards for vessels navigating the area. Improved information-sharing mechanisms are critical to maintaining operational safety and mitigating risks associated with these shifting underwater obstacles.

h. The absence of formally designated fleeting areas and the lack of enforced mooring practices contribute to congestion and inefficiencies along the waterway. Vessels often moor in unauthorized areas, including levees, which is prohibited under state regulations. This practice complicates traffic flow, especially during high-water events, and increases the risk of unanticipated vessel movements. The establishment of officially recognized fleeting areas, with proper authorization by USACE and enforcement is necessary to streamline operations and enhance safety during periods of elevated traffic.

i. State-level regulations prohibiting mooring to levees during high-water conditions significantly limits available fleeting options. This restriction reduces flexibility for commercial operators, particularly during peak traffic periods or emergency events. The limited availability of mooring space under these conditions hampers operational efficiency and exacerbates congestion, necessitating further planning to address these constraints.

j. While some fleet barriers and mooring infrastructure exist, the region lacks coordinated and standardized fleeting infrastructure. Insufficient tie-in points for vessels at varying water levels and the absence of formalized fleeting zones present operational challenges. Expanding and standardizing fleeting infrastructure is necessary to support safe, efficient, and scalable vessel operations across the waterway, especially during high-traffic or extreme weather conditions.

Appendix D. Geospatial Participant Comments

Facilitators captured participant observations that made specific geographic references. Those observations were transferred to an ArcGIS online web-application to generate chartlets reflecting the location and specific context of each comment. The chartlets are included below and represented as Figures 1-3.

Geospatial Comments	
Point	**Comment**
1	The Bayou Chene floodgate closes during hurricanes and cuts off the only bypass route for Bayou Boeuf Lock during storms.
2	The USACE emphasized the need for sustained dredging efforts, particularly in Gulf Intracoastal Waterway (GIWW) hot spots and areas such as Bayou Boeuf and Bayou Chene.
3	The channel in Bayou Chene needs to be expanded to its authorized dimensions of 400 feet wide and 20 feet deep.
4	Participants expressed concerns about dredge pipes in Bayou Black, citing them as major navigational hazards, especially during active dredging. These pipes also lack proper lighting at night which presents a heightened risk to vessels.
5	A drydock that was previously removed, protruded into the waterway near the Jessie Fontenot Memorial Boat Landing, causing vessels turning west into Mile Marker 99 to make dangerous maneuvers and risk contact with the bank while swinging their tows. Navigational issues will persist if a fleeting area is permitted by the US Army Corps of Engineers (USACE) at the former drydock location.
6	Recreational traffic in the area remains consistently dense. There is notable congestion during morning hours at Joe C. Russo Memorial Boat Landing and Jessie Fontenot Memorial Boat Landing.
7	Wind impacts tows staging for downbound traffic, especially near Bayou Boeuf Lock, the Jessie Fontenot Memorial Boat landing area and Rig Museum “Mr. Charlie.”
8	Multiple moored or abandoned barges in Bayou Shaffer near Avoca Island pose obstructions and safety concerns.
9	Bayou Boeuf Channel on the GIWW (Between Mile Markers 86 and 88) needs to be expanded to its authorized dimensions of 400 feet wide and 20 feet deep.
10	Participants emphasized that damage to Bayou Boeuf locks would disrupt navigation, amplify congestion, and undermine the reliability of the MTS.
11	Problem areas for visibility impediments include bridges and facilities east of Bayou Boeuf. Improperly angled lights from moored vessels and shipyards were identified as recurring issues.
12	There are numerous moored/abandoned barges located in Bayou Shaffer near Avoca Island.
13	Recommend designating Little Island Pass as a federal navigation channel. This alternative navigational route would reduce reliance on Stouts Pass.
14	Buoys are frequently displaced off-station in Stouts Pass.

15	Shoaling remains a persistent challenge at Stouts Pass, particularly during low water events and following severe weather events. The primary hazard is not the sandy bottom, but the accumulation of sediment that creates shoaling and ultimately causes draft restrictions for vessels transiting the pass.
16	The only wind sensor in the entire study area is located near Stouts Pass in Morgan City. The lack of real-time, location-specific wind data presents considerable risks, during high wind events.
17	Recreational traffic in the area remains consistently dense, with notable congestion during morning hours at Joe C. Russo Memorial Boat Landing and Jessie Fontenot Memorial Boat Landing.
18	Poorly maintained fishing vessels, particularly in Berwick Bay, are prone to sinking and abandonment; two have remained sunken at the pier for extended periods.
19	Participants raised visibility and maneuverability concerns about bridge structures, particularly the E.J. Lionel Grizzaffi Bridge, Long-Allen Bridge, and Berwick Bay Bridge, citing misalignment and narrow channels as factors limiting safe passage.

Table 1- Geospatial Comments.

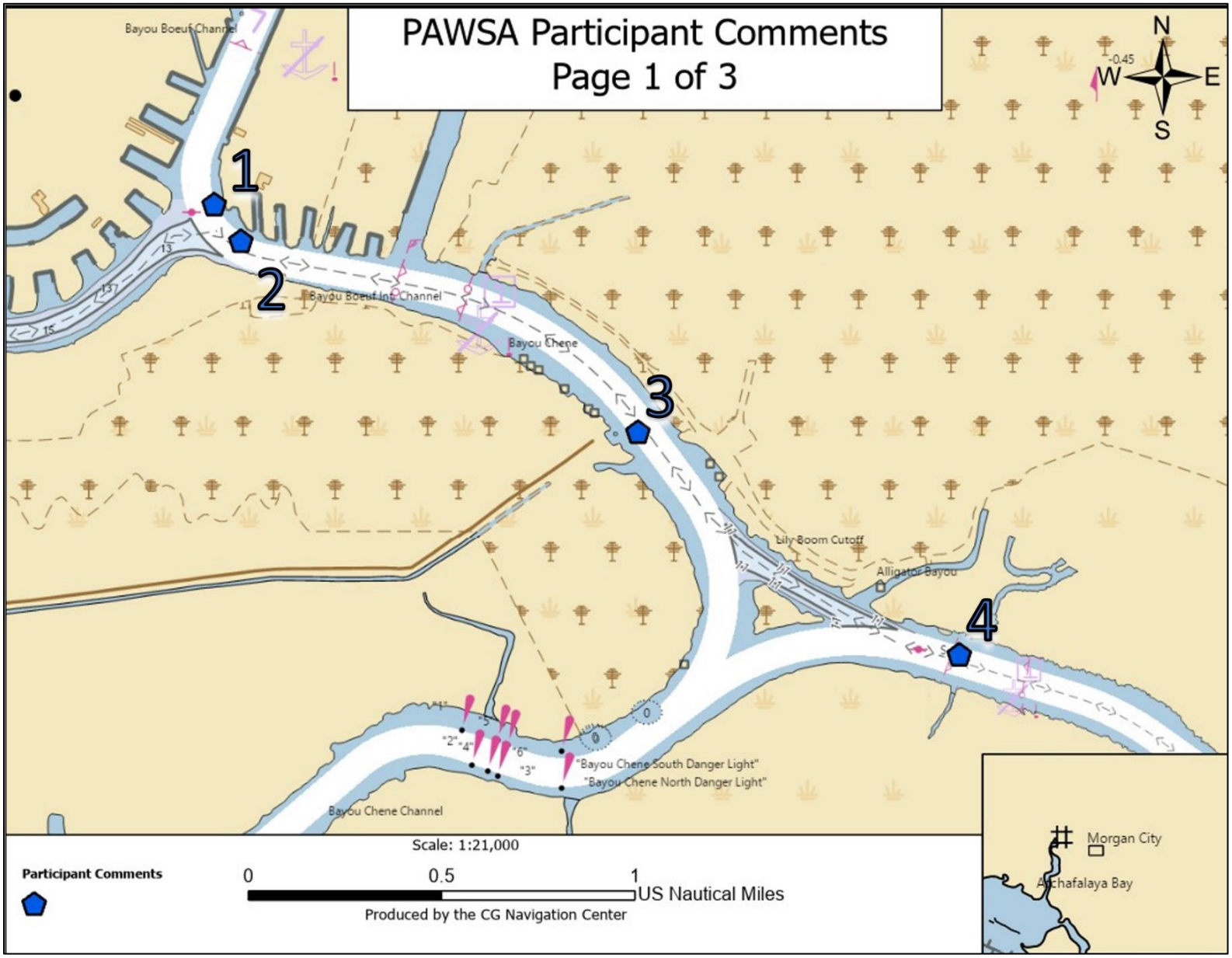

Figure 1- Mapped location of geospatial participant comments 1-4.

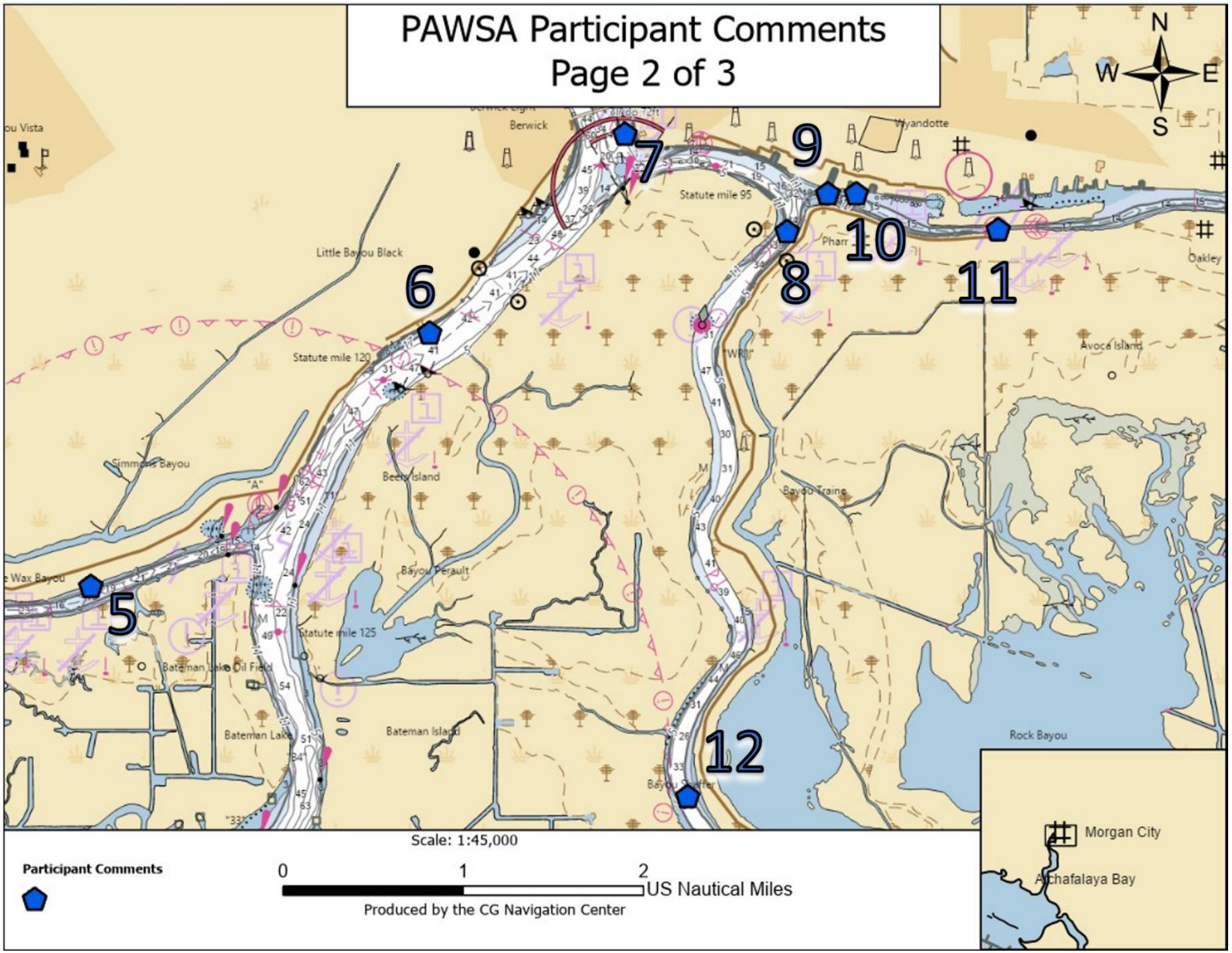

Figure 2- Mapped location of geospatial participant comments 5-12.

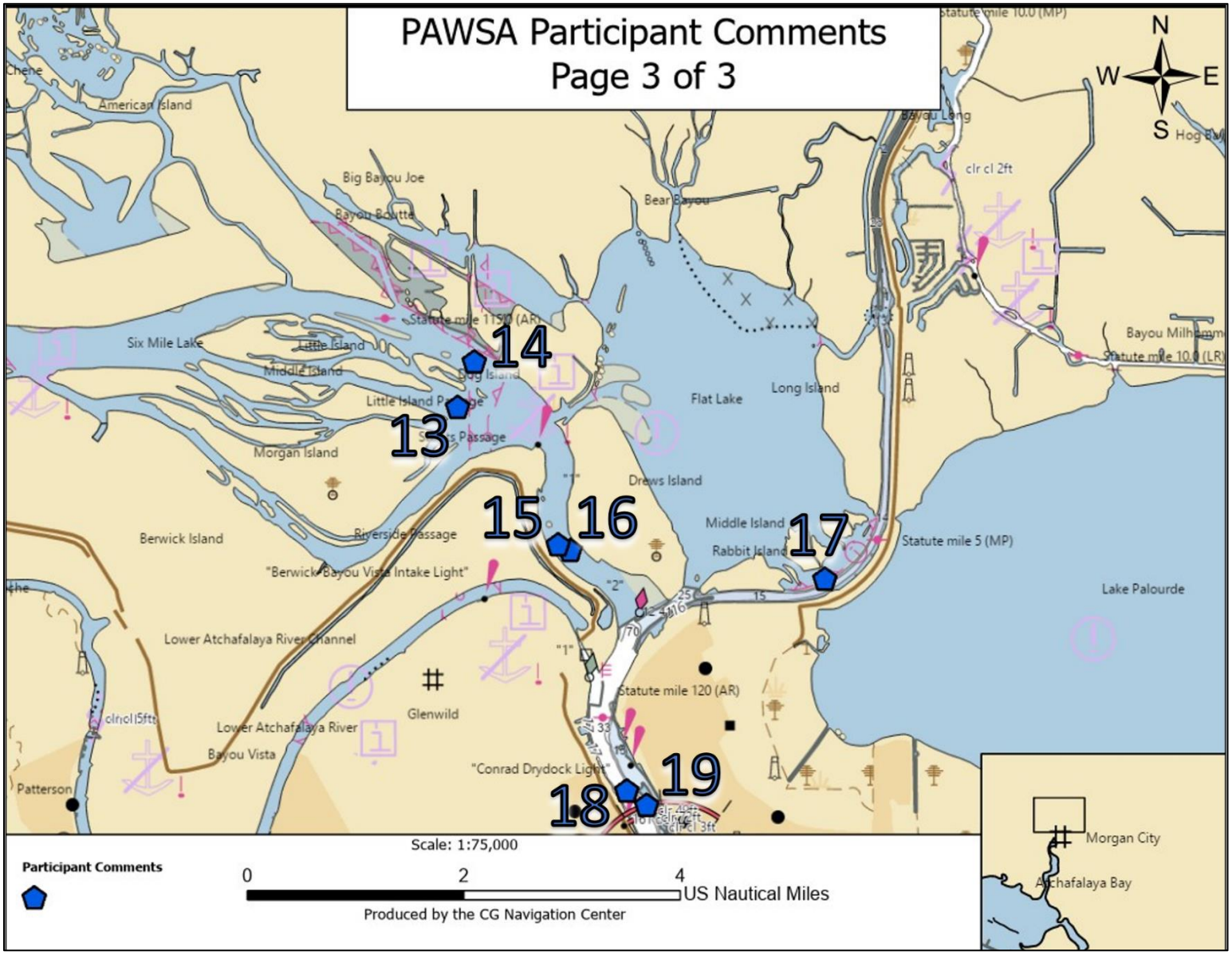

Figure 3- Mapped location of geospatial participant comments 13-19.